

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number  
**WO 2005/081303 A1**

(51) International Patent Classification<sup>7</sup>: **H01L 21/336**, G06K 19/07, 19/077, 19/10, G11C 17/12, H01L 21/20, 27/10, 29/786

(JP). DAIRIKI, Koji [JP/JP]; c/o Semiconductor Energy Laboratory Co., Ltd., 398, Hase, Atsugi-shi, Kanagawa, 2430036 (JP).

(21) International Application Number:  
PCT/JP2005/003225

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 21 February 2005 (21.02.2005)

(25) Filing Language: English

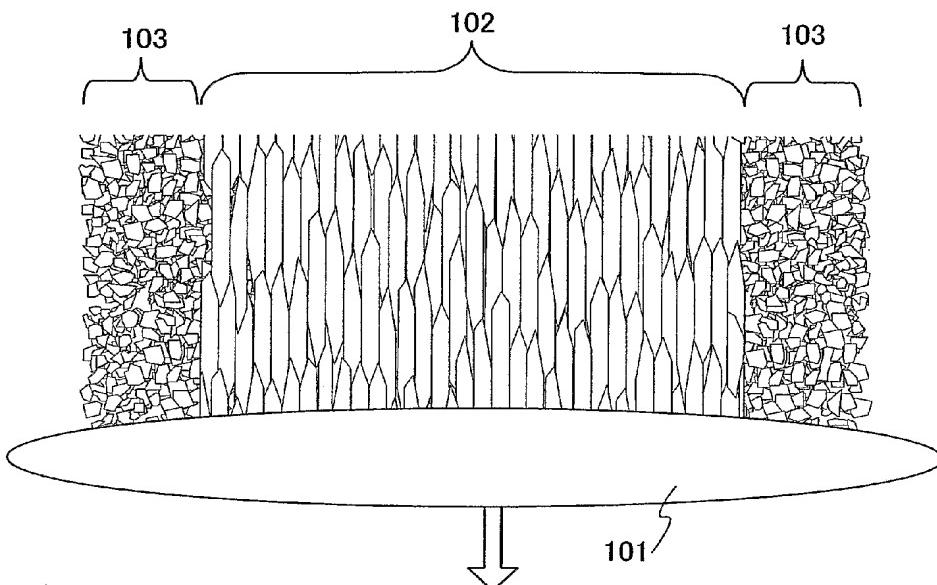
(26) Publication Language: English

(30) Priority Data:  
2004-050345 25 February 2004 (25.02.2004) JP

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SEMICONDUCTOR DEVICE



WO 2005/081303 A1

(57) Abstract: The present invention is to provide a semiconductor device that achieves high mechanical strength without reducing the circuit scale and that can prevent the data from being forged and altered illegally while suppressing the cost. The present invention discloses a semiconductor device typified by an ID chip that is formed from a semiconductor thin film including a first region with high crystallinity and a second region with the crystallinity inferior to the first region. Specifically, a TFT (thin film transistor) of a circuit requiring high-speed operation is formed by using the first region and a memory element for an identifying ROM is formed by using the second region.



**Published:**

— *with international search report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*